Stoller
Hanford Office

DOE-EM/GJ1040-2005

299-E26-63 (A6656)
Log Data Report

Borehole Information:

Borehole: 299-E26-63 (A6656)			Site: 216-A-24 Crib		
Coordinates (WA St Plane)		GWL[1] (ft) : None		GWL Date: 09/28/05	
North (m)	East (m)	Drill Date	Ground Level Elevation	Total Depth (ft)	Type
136422.482	575975.602	08/83	636.36	51	Cable

Casing Information:

Casing Type	Stickup (ft)	Outer Diameter (in.)	Inside Diameter (in.)	Thickness (in.)	Top (ft)	Bottom (ft)
Welded steel	1.85	6 5/8	6 1/8	1/4	1.85	50

Borehole Notes:

The logging engineer measured the casing diameter using a caliper and steel tape. Logging data acquisition is referenced to the top of casing.

Spectral Gamma Logging System (SGLS) Equipment Information:

Logging System:	Gamma 1E		Type:	SGLS (70%) SN: 34TP40587A
Effective Calibration Date:	03/04/05	Calibration Reference:	DOE-EM/GJ864-2005	
		Logging Procedure:	MAC-HGLP 1.6.5, Rev. 0	

High Rate Logging System (HRLS) Equipment Information:

Logging System:	Gamma 1C		Type:	HRLS SN: 39-A314
Effective Calibration Date:	04/06/05	Calibration Reference:	DOE-EM/GJ865-2005	
		Logging Procedure:	MAC-HGLP 1.6.5, Rev. 0	

Spectral Gamma Logging System (SGLS) Log Run Information:

Log Run	1	2	3	4 Repeat	
Date	10/03/05	10/03/05	10/03/05	10/03/05	
Logging Engineer	Spatz	Spatz	Spatz	Spatz	
Start Depth (ft)	51.0	23.0	17.0	11.0	
Finish Depth (ft)	23.0	16.0	2.0	5.0	
Count Time (sec)	100	20	100	100	
Live/Real	R	R	R	R	
Shield (Y/N)	N	N	N	N	

Log Run	1	2	3	4 Repeat	
MSA Interval (ft)	1.0	1.0	1.0	1.0	
ft/min	N/A[2]	N/A	N/A	N/A	
Pre-Verification	AE121CAB	AE121CAB	AE121CAB	AE121CAB	
Start File	AE122000	AE122029	AE122037	AE122053	
Finish File	AE122028	AE122036	AE122052	AE122059	
Post-Verification	AE122CAA	AE122CAA	AE122CAA	AE122CAA	
Depth Return Error (in.)	N/A	N/A	N/A	N/A	
Comments	No fine-gain adjustment	High rate interval; no gain adjustment	No fine-gain adjustment	No fine-gain adjustment	

High Rate Logging System (HRLS) Log Run Information:

Log Run	5				
Date	10/03/05				
Logging Engineer	Spatz				
Start Depth (ft)	23.0				
Finish Depth (ft)	17.0				
Count Time (sec)	300				
Live/Real	R				
Shield (Y/N)	N				
MSA Interval (ft)	1.0				
ft/min	N/A				
Pre-Verification	AC145CAB				
Start File	AC145000				
Finish File	AC145006				
Post-Verification	AC145CAA				
Depth Return Error (in.)	N/A				
Comments	No fine gain adjustment				

Logging Operation Notes:

Logging was conducted with a centralizer on each sonde. Measurements are referenced to the top of casing. Repeat sections were collected in this borehole to evaluate the logging systems' performance.

Analysis Notes:

Analyst:	Henwood	Date:	11/08/05	Reference:	GJO-HGLP 1.6.3, Rev. 0

Pre-run and post-run verifications for the logging systems were performed before and after data acquisition. Acceptance criteria were met.

A casing correction for 1/4-in.-thick casing was applied to the spectral log data (SGLS and HRLS).

SGLS and HRLS spectra were processed in batch mode using APTEC SUPERVISOR to identify individual energy peaks and determine count rates. Concentrations were calculated with EXCEL worksheet templates identified as G1EMar05.xls for the SGLS and G1CApr05.xls for the HRLS using efficiency functions and corrections for casing, water, and dead time as determined from annual calibrations. Where SGLS dead time exceeds 50 percent, HRLS data are substituted. No correction for water was necessary.

Results and Interpretations:

^{137}Cs was detected in this borehole between the ground surface and the bottom of the borehole (50 ft). The maximum concentration was measured at approximately 16,000 pCi/g at 21 ft in depth.

Westinghouse Hanford Company acquired spectral gamma data in this borehole in 1994 with the Radionuclide Logging System (RLS). A comparison of the RLS data with the current SGLS data shows good agreement, suggesting no changes have occurred since 1994.

The repeat sections for the SGLS indicate good agreement.

List of Plots:

Man-Made Radionuclides
Natural Gamma Logs
Combination Plot
Total Gamma and Dead Time
SGLS & RLS Comparison
Repeat of Man-Made Radionuclides
Repeat Section of Natural Gamma Logs

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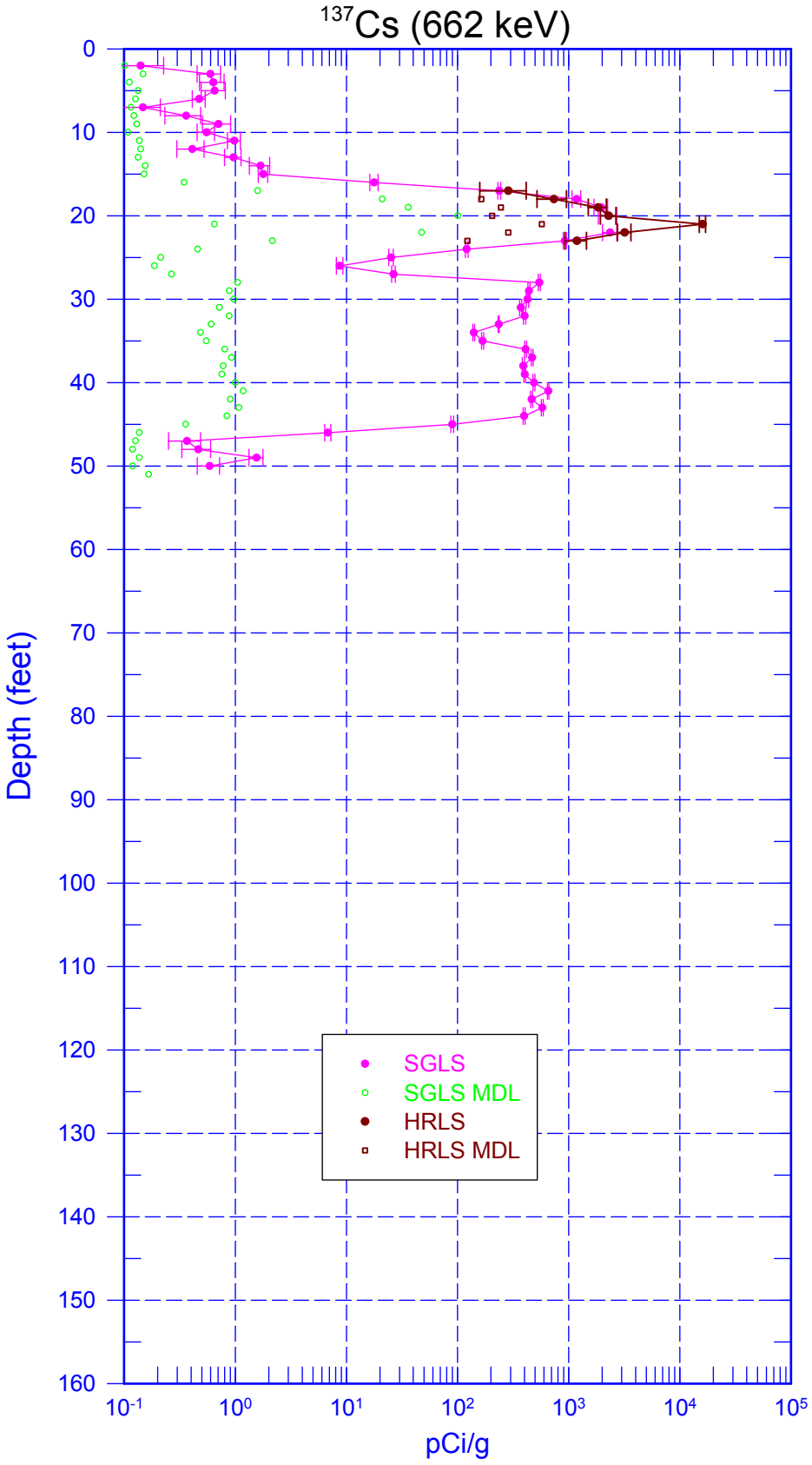
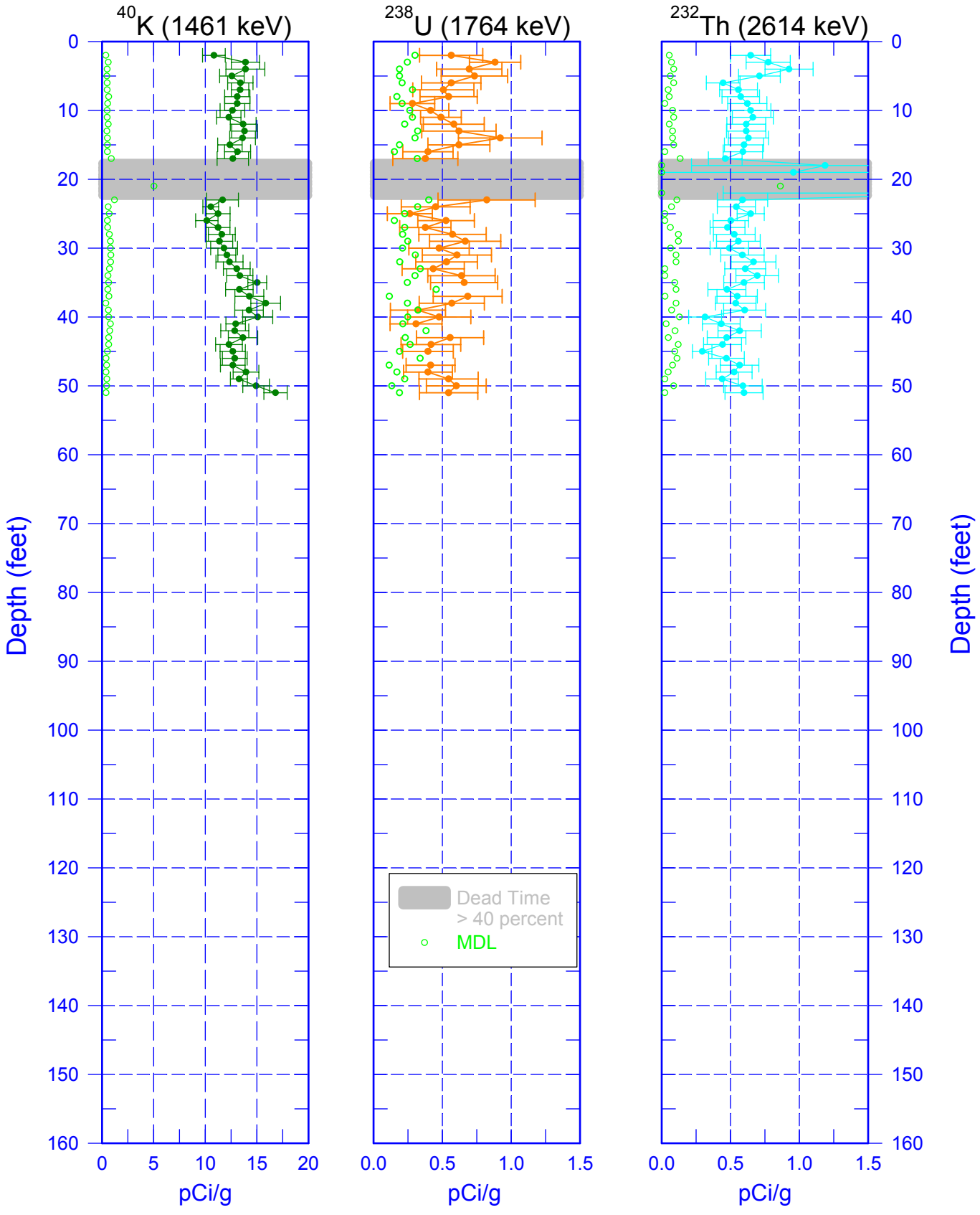
[1] GWL – groundwater level
[2] N/A – not applicable

299-E26-63 (A6656)
Man-Made Radionuclides



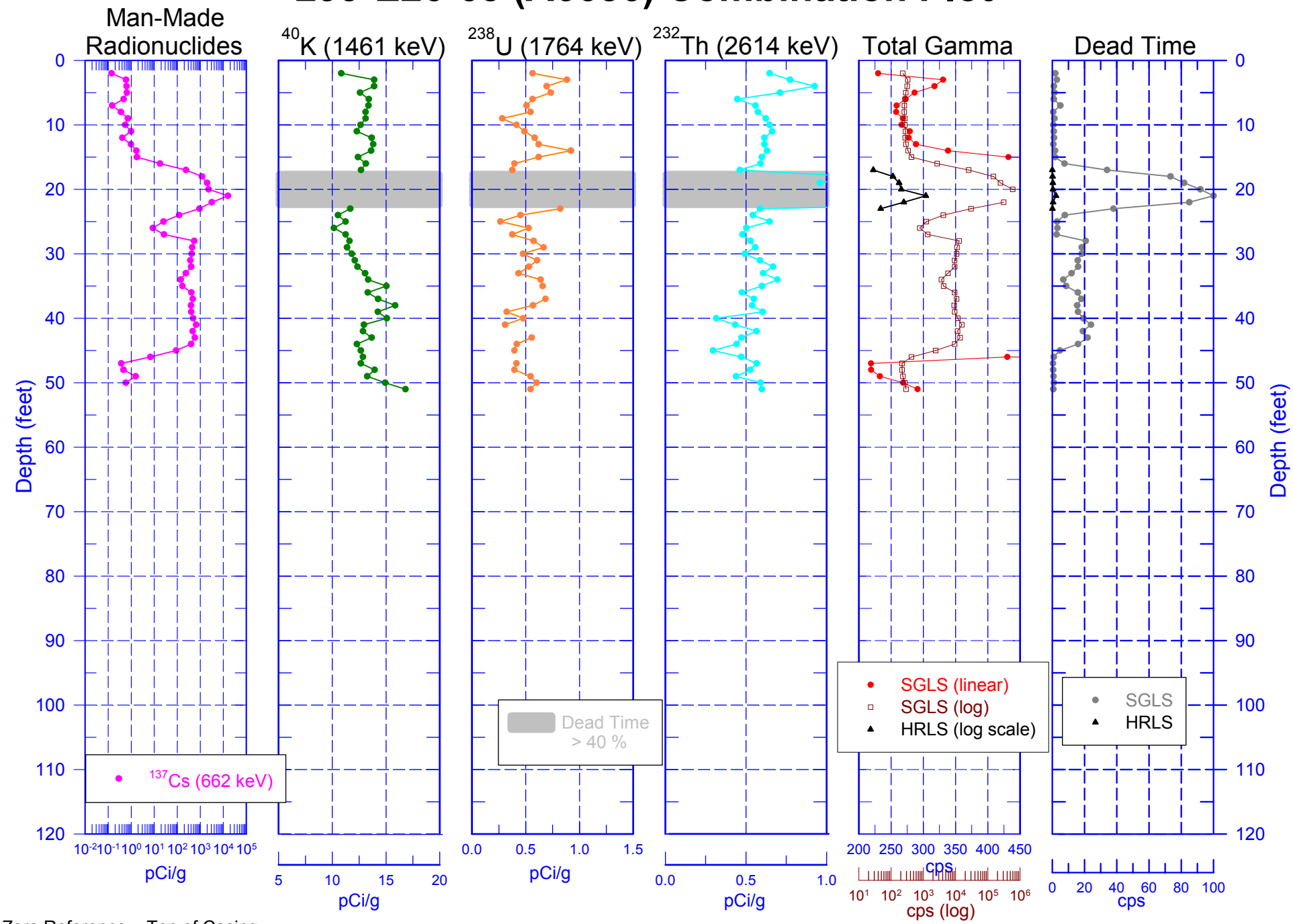
Zero Reference = Top of Casing

299-E26-63 (A6656)
Natural Gamma Logs



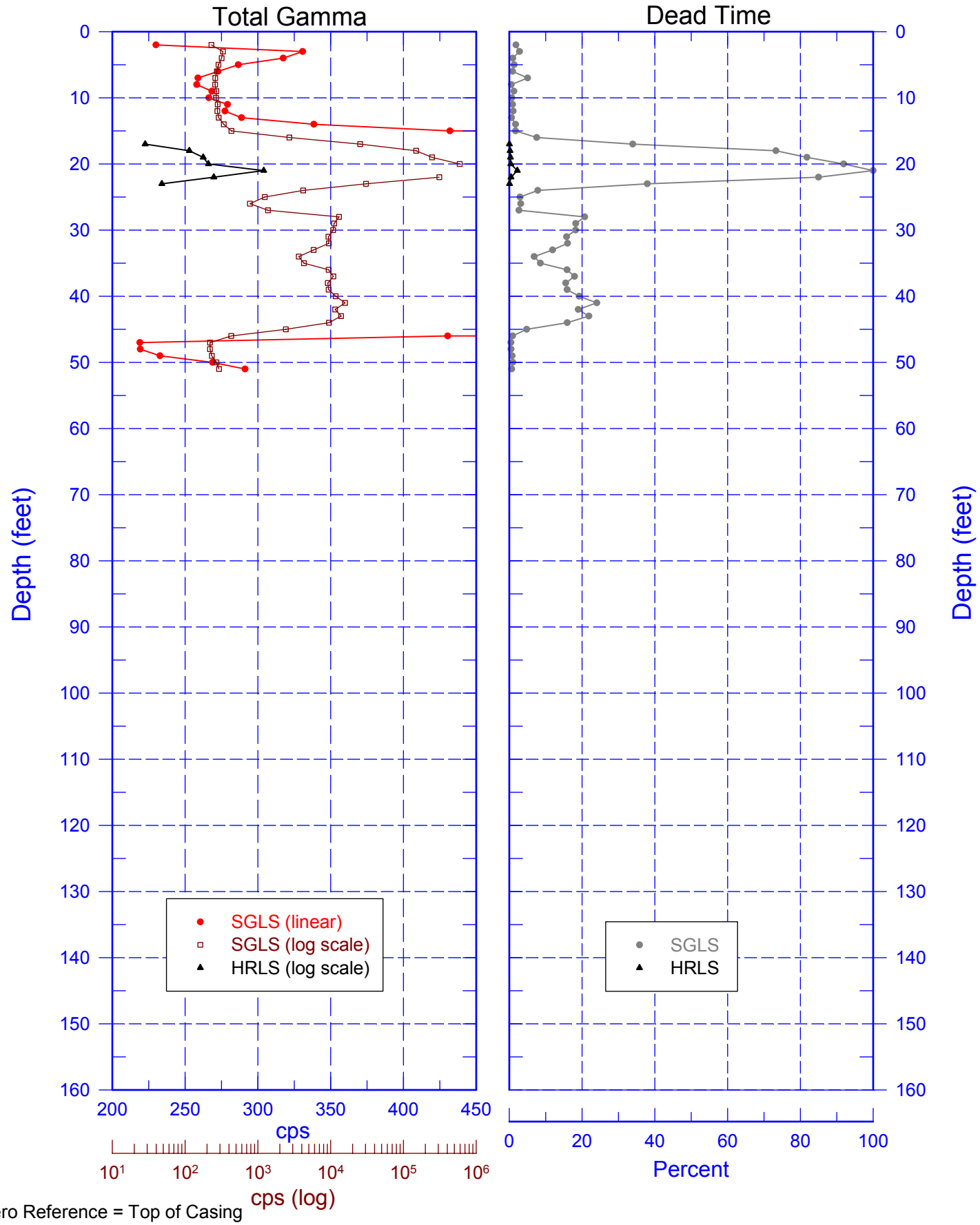
Zero Reference = Top of Casing

299-E26-63 (A6656) Combination Plot



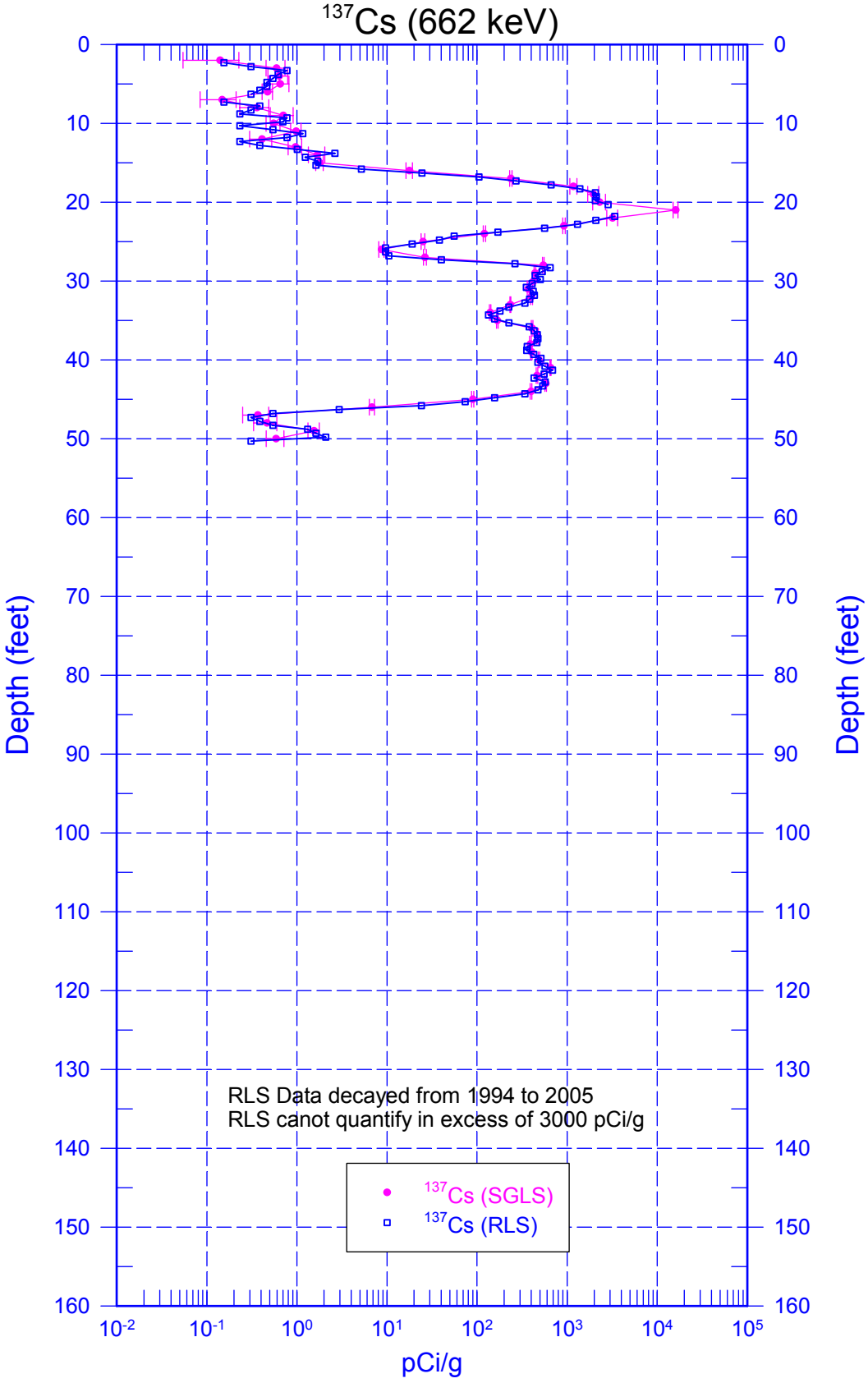
Zero Reference = Top of Casing

299-E26-63 (A6656)
Total Gamma & Dead Time



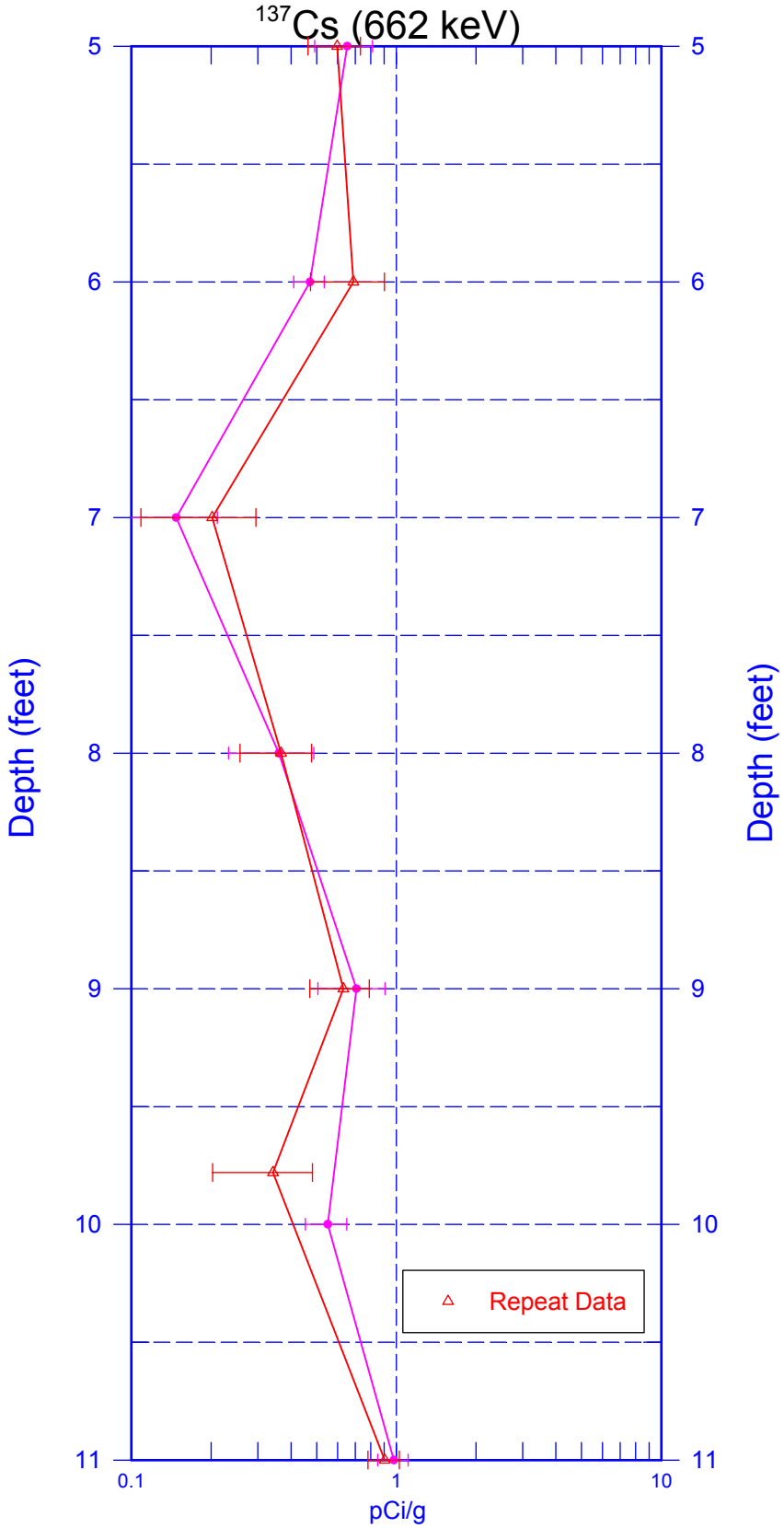
Zero Reference = Top of Casing

299-E26-63 (A6656)
SGLS & RLS Comparison Plot



Zero Reference = Top of Casing

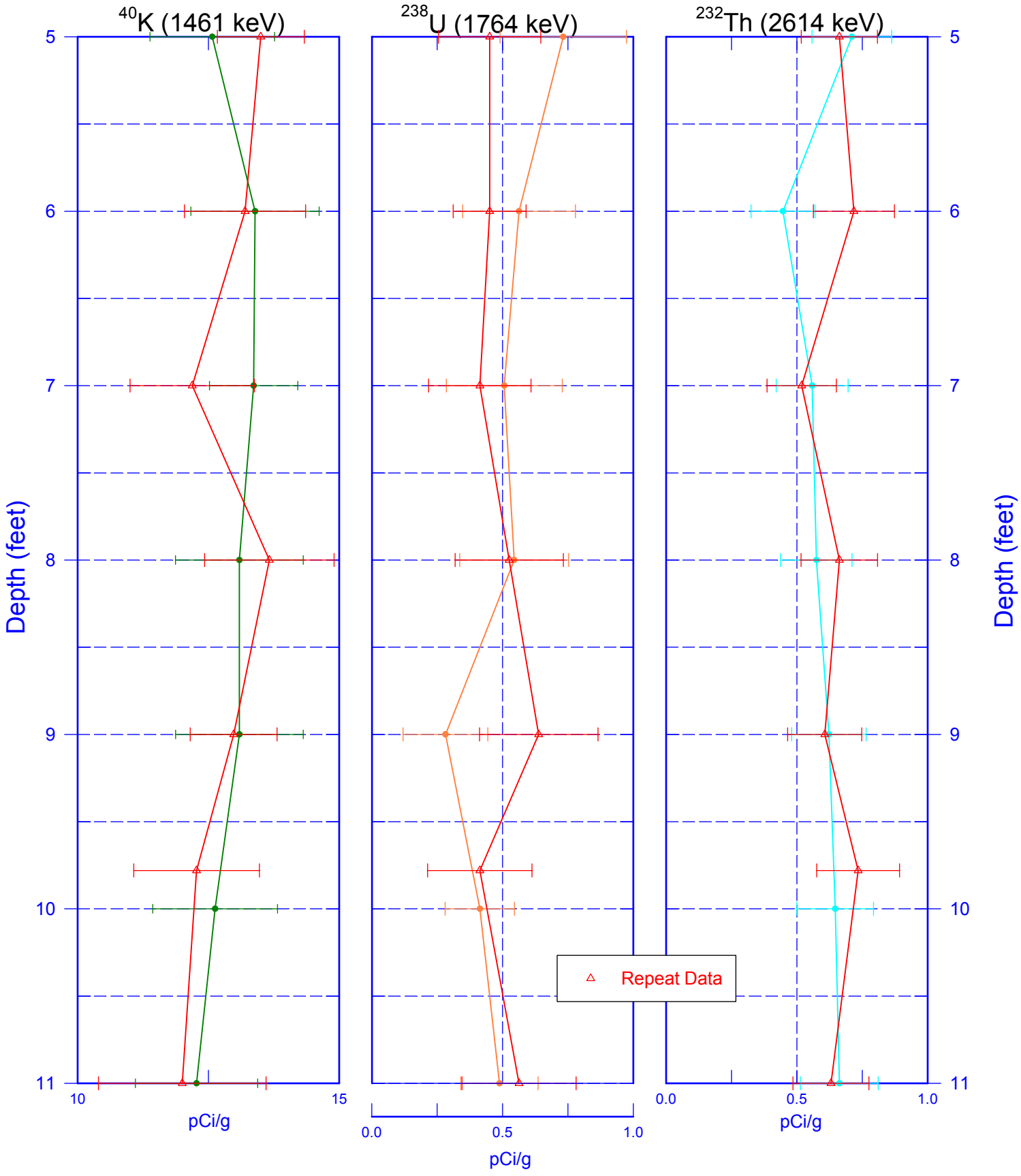
299-E26-63 (A6656)
Repeat Section of Man-Made Radionuclides



Zero Reference = Top of Casing

299-E26-63 (A6656)

Repeat Section of Natural Gamma Logs



Zero Reference = Top of Casing